

## Outdoor Lighting Assessment



### INTEGRATED ENERGY SYSTEMS — PRODUCTIVITY AND BUILDING SCIENCE PROGRAM

The New Buildings Institute's *Integrated Energy Systems — Productivity and Building Science Program* is dedicated to researching persistent building science questions and developing solutions with significant potential to save energy, improve indoor environmental quality and reduce operating and maintenance costs for building owners.

This three-year, \$6-million research effort, which is sponsored by the California Energy Commission's Public Interest Energy Research (PIER) program, consists of six distinct research elements. The program was launched in August 2000.

### Research Element #7: Outdoor Lighting Baseline Assessment

This research element is conducting the first major study of outdoor lighting practices in California. We are looking at the outdoor lighting of nonresidential buildings, parking areas, walkways and signage. Our goals are to estimate the amount of energy currently used by outdoor lighting in California and to contribute to potential methods to regulate its energy use.

This project will fill in knowledge gaps, recommend good design practices, highlight poor outdoor lighting practices, and estimate the energy savings potential from improving current practices statewide.

Project budget: \$523,606

### Results

Our research team is conducting baseline surveys of current design practices in California, where there are currently no limits on outdoor lighting energy use. We will document light levels, design effectiveness, light trespass, lighting power and equipment usage in commercial applications, and we will develop a statistically sound methodology that is easily replicated. We will recommend design and efficiency improvements, and document statewide savings potentials. Finally, we will provide a baseline for potential code upgrade options to California's Title 24 building standards, Title 20 appliance standards, or both. The Baseline Assessment is available on the web site.

#### Key Research Milestones

#### Completion Date

Initial market characterization (1,000 telephone surveys)

Fall 2001

Critical analysis of first 50 field surveys

Fall 2001

Development of data collection and analysis tool

Winter 2002

Statewide assessment (statewide, statistically representative  
baseline survey of outdoor lighting) Final Report

Fall 2002

### Lead Personnel

♦ Roger Wright, Matt Brost & Sam Pierce, RLW Analytics, Inc., Element Leads ♦ Cathy Higgins, NBI Program Director ♦ Don Aumann, California Energy Commission Contract Manager ♦ M. Neils Engineering, Inc. ♦ Clanton & Associates, Inc.



For more information: [www.newbuildings.org/pier](http://www.newbuildings.org/pier)  
[www.energy.ca.gov/pier/buildings](http://www.energy.ca.gov/pier/buildings)

New Buildings Institute, Inc. PO Box 653 142 E. Jewett Blvd. White Salmon, WA 98672

voice 509.493.4468

fax 509.493.4078

[www.newbuildings.org](http://www.newbuildings.org)